

MTL4523/4523R

SOLENOID/ALARM DRIVER

with line fault detection, IIC

With the MTL4523 interface, an on/off device in a hazardous area can be controlled by a voltage signal in the safe area. It is suitable for driving loads such as solenoids. Line fault detection (LFD), which operates irrespective of the output state, is signalled by a safe-area solid-state switch which de-energises MTL4523, or energises MTL4523R, if a field line is open or short-circuited. Earth fault detection can be provided by connecting an MTL4220 earth leakage detector to terminal 3.

SPECIFICATION

See also common specification

Number of channels

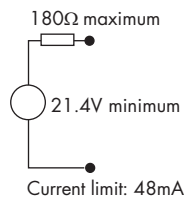
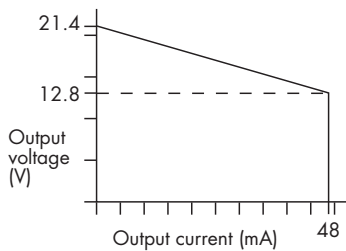
One

Location of load

Zone 0, IIC, T4-6 hazardous area if suitably certified
Div. 1, Group A, hazardous location

Minimum output voltage

Equivalent output circuit



Hazardous-area output

Minimum output voltage: 12.8V at 48mA
Maximum output voltage: 24V from 180Ω
Current limit: 48mA

Output ripple

< 0.5% of maximum output, peak to peak

Control input

Suitable for switch contacts, an open collector transistor or logic drive

Output turns on if input switch closed, transistor on or < 1.4V applied across terminals 10 & 11

Output turns off if input switch open, transistor off or > 4.5V applied across terminals 10 & 11

Response time

Output within 10% of final value within 100ms

Line fault detection (LFD)

Open or short circuit in field cabling de-energises solid state line fault signal. (MTL4523R transistor is energised when line fault is detected)

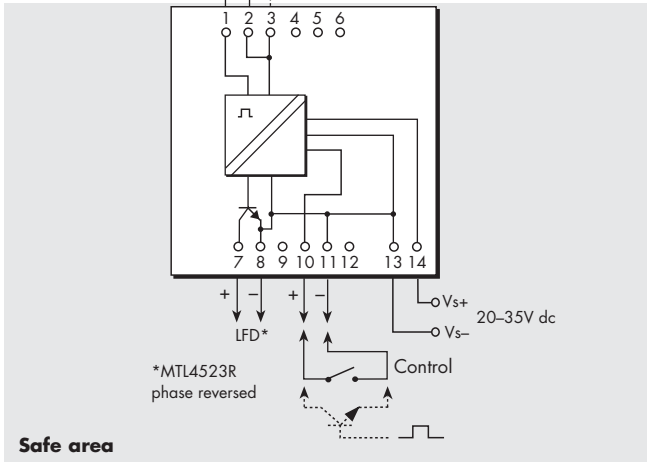
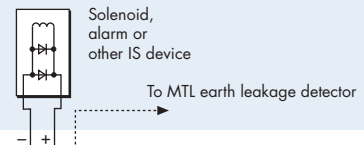
LFD transistor is switched on (off MTL4523R), provided that the field circuit impedance is > 55Ω and < 6k5Ω.

Line fault signal characteristics

Maximum off-state voltage: 35V
Maximum off-state leakage current: 10μA
Maximum on-state voltage drop: 2V
Maximum on-state current: 50mA

Note: LFD signal is Zener-diode protected against inductive loads

Hazardous area



Safe area

Terminal	Function
1	Output -ve
2	Output +ve
3	To earth leakage detector
7	Line fault signal +ve
8	Line fault signal -ve
10	Control +ve
11	Control -ve
13	Supply -ve
14	Supply +ve

LED indicators

Green: power indication
Yellow: output status, on when output circuit is active
Red: LFD indication, on when line fault is detected

Maximum current consumption

100mA at 24V dc

Power dissipation within unit

1.2W with typical solenoid valve, output on
2.0W worst case

Safety description

$V_o=25V$ $I_o=147mA$ $P_o=919mW$ $U_m = 253V$ rms or dc

